United Nations A/62/343

General Assembly

Distr.: General
24 October 2007

Original: English

Sixty-second session
Agenda item 54
Sustainable development

# Oil slick on Lebanese shores

## Report of the Secretary-General*

*Summary*

The present report, submitted in response to the request contained in General Assembly resolution 61/194, reviews the impact of the oil spill that occurred on the Lebanese shores in July 2006 on human health, biodiversity, fisheries and tourism, as well as its implications for the livelihoods and the economy of Lebanon.

While the response of the international community has been swift and generous, the report urges Member States, international and regional organizations, non-governmental organizations and the private sector to continue their support for Lebanon in this matter particularly and in its broader reconstruction efforts in general.

* The submission of the report was delayed to allow for further consultations with interested stakeholders.

07-56251 (E) 261007

# I. Introduction

1. The present report has been prepared by a United Nations inter-agency team, pursuant to General Assembly resolution 61/194, entitled "Oil slick on Lebanese shores". In paragraph 5 of the resolution, the Assembly requested the Secretary-General to submit a report on the implementation of the resolution at its sixty-second session under the item entitled "Sustainable development".

2. The report includes an assessment of the impact of the oil spill on human health, biodiversity, fisheries and tourism, and implications for livelihoods and the economy of Lebanon; progress made in approaching the Government of Israel in assuming responsibility for prompt and adequate compensation to the Government of Lebanon; and an overview of the financial and technical assistance in support of the efforts to clean up the polluted shores and sea of Lebanon with a view to preserving its ecosystem.

# II. Impact of the oil spill on human health, biodiversity, fisheries and tourism, and implications for livelihoods and the economy of Lebanon

3. The marine oil spill resulted in the release of about 15,000 tons of fuel oil into the Mediterranean Sea, leading to the contamination of 150 km of coastline in Lebanon and the Syrian Arab Republic. Paragraph 1 of resolution 61/194 refers to "the adverse implications of the destruction by the Israeli Air Force of the oil storage tanks in the direct vicinity of the Lebanese El-Jiyeh electric power plant for the achievement of sustainable development in Lebanon", and in paragraph 2 the Assembly "considers that the oil slick has heavily polluted the shores of Lebanon and consequently has serious implications for human health, biodiversity, fisheries and tourism, all four of which in turn have serious implications for livelihoods and economy of Lebanon".

4. Several United Nations and other international agencies have been involved in assessing the implications of the oil spill for human health, biodiversity, fisheries and tourism in Lebanon (for example the Food and Agriculture Organization of the United Nations (FAO), the World Conservation Union (IUCN), the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP) and the World Bank). Taken together with the reports by the Government of Lebanon and UNEP/Mediterranean Action Plan/Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), the reports provided a prompt and reasonably comprehensive account of immediate impacts and response. The coverage permits a sustainable development approach to documenting adverse impacts, under the triple headings of:

(a) Social (public health and safety);

(b) Economic (clean-up and monitoring, lost economic opportunities);

(c) Environmental (ecological and physico-chemical impacts).

5. In October 2006, UNEP conducted a post-conflict environmental assessment of Lebanon. It should be noted that the UNEP report focused on assessment of environmental conditions (water, sediment, biota) in the near-shore zone, rather than

the littoral zone where oiling was heaviest and clean-up was ongoing at the time of the surveys (in October 2006). The UNEP findings, which were released in January 2007,[1] along with the recent United Nations inter-agency findings during the mission in October 2007, on the adverse impacts on the coastal and marine environment, can be summarized as follows:

(a) The oil spill resulting from the bombings of the El-Jiyeh power plant on 13 and 15 July 2006 caused significant contamination of the Lebanese coastline. The seabed at El-Jiyeh was significantly affected by the oil spill. Clean-up operations by local and international organizations are continuing, but the safe disposal of oily waste from the work remains a serious concern;

(b) A proportion of the oil spilled sank in the vicinity of El-Jiyeh as a result of loss of volatiles after burning and incorporation of sand, and covered the seabed over an area of a few hundred metres out to sea, smothering biota in the sediment. The oil that did not sink either evaporated, adding volatile organic compounds to the atmosphere,[2] or was caught in the northbound current and transported up the Lebanese coast, reaching the Syrian Arab Republic. The prevailing wind also prevented the oil from spreading out to sea, pushing it instead northwards against the predominantly rocky and coarse sediment coastline. Most of the oil contamination stuck on the coastline, coating surfaces, filling voids in coarse sediments, and adding petroleum hydrocarbon contamination in the seabed sediments at depths of 4 to 25m along the coast;

(c) Harbours, coves, caves and small natural bays were particularly affected, as the oil tended to get trapped there. Affected locations included the biologically important sites of Palm Islands Nature Reserve, archeologically significant areas in Byblos and various beaches that are important from the standpoint of tourism;

(d) The flora and fauna on rocks and sandy beaches that were directly exposed to the oil were also affected. Significant mortality, as result of toxicity smothering, most probably occurred among littoral invertebrates such as gastropods, polychaetes, crustaceans and algae, especially on heavily contaminated beaches. The full recovery of these habitats is likely to take some years. It is recommended that all available shoreline data on oil concentrations, oil weathering indicators and flora and fauna parameters should be collected to add to the UNEP near-shore findings. Following this, focused monitoring on a routine and long-term basis at different sites may be used to assess the remaining impacts of the oil spill in terms of status, trends and recovery;

(e) In October 2006, the concentrations of polycyclic aromatic hydrocarbons and petroleum hydrocarbons in seabed sediment, oysters and fish were found to be similar to those in areas under anthropogenic influence for the eastern part of the Mediterranean. The analysis of marine waters sampled three months after the spill detected traces of oil dispersed and dissolved in the water only in the affected areas;

(f) The bombing of the El-Jiyeh power plant, a civilian utility serving the general population, occurred close to the beginning of the conflict. Hostilities were therefore ongoing during the critical early days of the oil spill, and security conditions severely hampered access to the coastline, as well as any potential large-

[1] See http://postconflict.unep.ch/publications.php?prog=lebanon.

[2] Oceanography Centre, University of Cyprus Nicosia, 2006, "Oil spill modelling predictions in the Mediterranean (Lebanon coastal oil spill pollution)".

scale oil clean-up response operations. Oil-spill clean-up is still ongoing at multiple locations on the Lebanese coast. However, remobilization by natural wave action of the oil coatings on rock and man-made surfaces and of oil mixed with sediments back into the water is still possible, and may lead to temporary increases in oil concentrations in the shallow near-shore and littoral zones;

(g) The clean-up of the oil spill has resulted in substantial quantities of oily liquids, solids and oil-contaminated debris and soils. Currently Lebanon has no environmentally acceptable disposal facilities for these waste streams. Conditions of temporary storage at some clean-up sites are not ideal and evidence of some commingling of other wastes was seen in October 2007 at some sites. The El-Jiyeh power station is well on its way to full reconstruction, but the oiled wastes are still in temporary storage. Mobilization of international technical assistance and donor support to create an environmentally acceptable disposal solution is still needed.

6. The present report is submitted approximately one year after the oil spill. It is recommended that the concentrations of pollutants and biological parameters be monitored on a routine basis to track the recovery of affected sites and the general state of the environment. United Nations agencies and other international partners, in collaboration with the Government of Lebanon, are planning programmes for the development of an environmental-quality monitoring system that includes polluted areas.

7. In August 2006, UNDP initiated a rapid environmental assessment, based on existing research and observations, which was completed in December 2006 and published in February 2007.[3] The report identified 46 environmental impacts, of which 9 are marine oil-spill related, as follows:

(a) Severe (2): littoral pollution from oil spill (medium-term, or 1 to 10 years) and impact on marine biodiversity (especially rocky biogenic reefs and Palm Islands Nature Reserve) from oil spill from El-Jiyeh power plant (long-term, or 10 to 50 years);

(b) Critical-significant (3): air pollution from El-Jiyeh fire (short-term, or less than one year),[4] marine sediment impact from sunken oil (medium-term, or 1 to 10 years) and soil pollution from deposited contaminants of fuel burning at El-Jiyeh (medium-term, or 1 to 10 years);

(c) Critical but non-significant (2): impact on seawater quality from oil spill (short-term, or less than one year) and soil impact at El-Jiyeh site (medium-term, or 1 to 10 years);

(d) Marginal (1): pollution affecting plants and ecosystem from fuel burning in El-Jiyeh (short-term, or less than one year);

(e) Negligible (1): impact on coastal aquifers from oil spill (short-term, or less than one year).

[3] See www.undp.org.lb/communication/archives/REA.htm.

[4] The report addresses the issue of air pollution from fuel burning, stating that the "estimated 60,000 $m^3$ of fuel that burned are thought to have caused extensive atmospheric contamination in a plume reportedly reaching as far as 60 km, releasing 2.45$PJ^5$ of heat", adding that "in the vicinity of Jiyeh, this atmospheric plume may have caused some short-term respiratory symptoms among exposed population", in addition to contributing to adverse climate change.

8. The UNDP report also addressed the impact of the oil spill on cultural heritage, describing how "Archaeological structures in Byblos were severely affected by the oil spill from the Jiyeh power plant. Two medieval towers that constitute the entrance to the harbour have their basement stones covered by a thick layer of fuel. Some other ancient ruins of different periods, located below the archaeological Tell, are also covered by a fuel layer."

9. The UNDP report pointed out: "A national oil spill clean-up operation for the Lebanese coast could not start immediately after the spill occurred or even after the ceasefire due to the air and marine blockade enforced by the Israeli army on Lebanon as well as due to the lack of human, material and financial resources." Existing resources were devoted to attending to humanitarian aid and immediate public health needs. Although the logistics of clean-up operations were initiated earlier, the major clean-up operations could not start until a few weeks after the ceasefire. Moreover, it is worth mentioning that the bombardment of bridges and roads also delayed the onset of the clean-up operations.

10. The UNDP report also stressed the issue of oil-spill clean-up and waste management, particularly taking into account the lack of necessary infrastructures in Lebanon.

11. The World Conservation Union task force and assessment team arrived in Lebanon after the hostilities, on 15 August 2006. The main findings of the mission[5] include the following:

(a) It is clear that much of the shoreline ecosystem was physically and chemically contaminated. The impact included significant mortality and impairment of the structure and function of the shoreline ecosystem. Of particular concern with shoreline oiling is the impact on Vermetid terraces/coralline reef communities. Populations of sand-beach meiofauna have been diminished by up to 90 per cent in places, according to the National Council for Scientific Research.[6] These organisms are prey for fish and could thus reduce fish stocks, with possible consequential economic loss;

(b) The oil spill had a direct impact on biodiversity hot spots and fragile marine ecosystems, such as the only marine protected area in the country: Palm Islands Nature Reserve;

(c) Oil from the spill covering the shoreline for long periods of time was seen to have posed a serious threat to migrating birds, marine turtles and other fauna and flora all along the shore, but specifically in the Palm Islands Nature Reserve and Damour area. Marine life in shallow waters could have been adversely affected, although Lebanon is thought to have no seagrass, a biotope particularly sensitive to oil spills. There may have been an impact on sand dunes of North Lebanon, and specifically Palm Islands Nature Reserve;

(d) The period from July through September is the hatching season for marine loggerhead turtles (Caretta caretta) and green turtles (Chelonya mydas). It is likely that these endangered species have been exposed to residual oil on beaches as

[5] See *Lebanon Oil Spill Rapid Assessment and Response Mission Report.*

[6] G. Khalaf, K. Nakhle, M. Abboud-Abi Saab, J. Tronczynski, R. Mouawad et M. Fakhri; "Preliminary results of the oil spill impact on Lebanese coastal waters"; *Lebanese Science Journal*, Vol. 7, No. 2, 2006.

well as offshore waters. Such exposure may result in mortality and/or sub-lethal effects, including carcinogenesis and physiological and reproductive impairment. It is likely that slow-moving and benthic species have been the most affected fauna at the El-Jiyeh power plant, where the most significant amount of oil sank to the seabed;

(e) In general, marine birds are affected by oil spills, either by plumage oiling and loss of thermoregulation and buoyancy, or through acute poisoning during preening, decrease in reproduction or damage to food source and habitat. Southerly bird migration along the coastal zone of Lebanon starts in September. Some 100 oiled birds were observed in the Palm Islands Nature Reserve. It is almost certain that others were exposed, but went unnoticed at sea or along unmonitored segments of the shoreline;

(f) This likely degradation of the ecosystem (by deterioration of vegetation, disturbance to wildlife and destruction of delicate habitats and endangered species of fauna and flora) means that an integrated impact and recovery assessment programme is needed for the conservation of biodiversity.

12. In September 2006, FAO conducted a damage assessment in the agriculture and fisheries sectors. It fielded an assessment mission to (a) evaluate the overall damage caused to the farming and fishing communities and (b) elaborate an early recovery programme for the immediate needs of the most vulnerable farming and fishing communities in the affected areas.

13. The FAO report was released in November 2006.[7] The conclusions reached in respect of conflict impacts on the marine fisheries sector are set out below.

14. The total loss in the fisheries sector was estimated at $9.73 million. This included loss of boats and other equipment and the destruction of a fishermen's cooperative. The oil spill also affected fisheries by blocking harbours and fouling vessels, gear and mooring lines. Fishing vessels became inoperable due to engine damage from the oil. These direct impacts caused economic losses, while indirect impacts ranged from loss of income to difficulties in marketing of fishing-related products. From the outbreak of the conflict on 12 July 2006 to the lifting of the sea blockade by Israel on 9 September 2006, no fishing was possible and, accordingly, no income was generated. The follow-on effect was loss of income for those involved in fish marketing, specialized fish restaurants and services to the fishing industry. After it became possible to resume fishing operations, there was resistance to fish consumption from Lebanese consumers due to perceived food-safety concerns, contributing to a reduction in market demand.

15. The fishing community suffered enormously from the effect of the July 2006 hostilities, both directly, as a result of hostile action, and indirectly, from the loss of income caused by the conflict and its after-effects. Future actions are required to ensure sustainable development and improvement of the livelihoods of the fishing communities, further clean-up of harbours and shorelines and preservation of coastal marine life.

[7] *Damage and Early Recovery Needs Assessment of Agriculture, Fisheries and Forestry.*

16. The World Bank carried out an economic assessment of environmental degradation resulting from the July 2006 hostilities.[8] The overall cost was estimated at between $527 million and $931 million, averaging $729 million, or about 3.6 per cent of Lebanon's gross domestic product in 2006. Table 1, drawn from that assessment, lists the damage by category of impact. Table 2, also drawn from the World Bank assessment, presents the estimated costs of damage and clean-up relating to the oil spill, estimated at $203 million (excluding damage such as health-related impacts and losses to ecosystem services, and also excluding damages during the period of actual hostilities and the costs of many clean-up operations to be performed in the future).

Table 1
**Overall cost of environmental degradation caused by the hostilities in Lebanon in July 2006**

| *Category* | *Minimum* | *Maximum* | *Average* | *Percentage of gross domestic product*[a] |
|---|---|---|---|---|
| | *(Millions of United States dollars)* | | | |
| Waste | 206.8 | 373.5 | 290.2 | 1.4 |
| Oil spill | 166.3 | 239.9 | 203.1 | 1.0 |
| Water | 131.4 | 131.4 | 131.4 | 0.6 |
| Quarries | 15.4 | 175.5 | 95.5 | 0.5 |
| Forests | 7.0 | 10.8 | 8.9 | 0.0 |
| Air | — | — | — | — |
| **Total** | **526.9** | **931.1** | **729.0** | **3.6** |

*Source*: World Bank, 2007.

[a] Based on estimated gross domestic product of $20.5 billion for 2006 (Economist Intelligence Unit, 2006).

Table 2
**Estimated costs of damage and clean-up relating to the oil spill**

| | *Minimum* | *Maximum* | *Mean* |
|---|---|---|---|
| | *(Millions of United States dollars)* | | |
| **Category of damage** | | | |
| Hotels | 22.8 | 59.6 | 41.2 |
| Beach resorts, chalets, public beaches | 13.2 | 34.8 | 24.0 |
| Marine sports activities | 4.0 | 4.2 | 4.1 |
| Palm Islands Nature Reserve | 0.7 | 1.2 | 1.0 |
| Byblos | 0.1 | 0.1 | 0.1 |
| Restaurants | 19.5 | 31.1 | 25.3 |
| Commercial fishing | 3.0 | 5.9 | 4.4 |

[8] *Cost assessment of environmental damage caused by recent hostilities in Lebanon*. Concept Note No. 39787-LB. Washington, D.C., 2007.

| | *Minimum* | *Maximum* | *Mean* |
|---|---|---|---|
| | *(Millions of United States dollars)* | | |
| **Seashore fishing** | 0.3 | 0.5 | 0.4 |
| **Oil fuel burnt** | 39.1 | 39.1 | 39.1 |
| **Subtotal** | **102.8** | **176.4** | **139.6** |
| **Clean-up** | | | |
| **Expenditure already made** | 14.9 | 14.9 | 14.9 |
| **Oiled waste** | 48.2 | 48.2 | 48.2 |
| **Monitoring** | 1.5 | 1.5 | 1.5 |
| **Subtotal** | **63.5** | **63.5** | **63.5** |
| **Total** | **166.3** | **239.9** | **203.1** |

*Source*: World Bank, 2007.

17. The World Health Organization (WHO) conducted a fact-finding mission to Lebanon and published a report in this regard.[9] The WHO assessment looked at the health-care institutions in those districts that were primarily affected by the conflict. Eighty-three per cent of the health facilities were surveyed; 26 per cent of those facilities were not functioning, 6 per cent were partially functioning and 35 per cent were inaccessible by road because of the destruction of roads and bridges and/or the presence of unexploded ordnance.

18. WHO, together with other international agencies, supported the country in its recovery efforts. The World Health Organization concentrated its efforts on maintaining the provision of priority medical and quality health interventions. The clear priorities were understandably:

(a) Essential drugs, medical supplies and chlorine for water disinfection distributed through the Ministry of Public Health — WHO warehouse;

(b) Rehabilitation of health centres and re-establishment of health services;

(c) Surveillance and control of communicable diseases;

(d) Immunization campaign against measles and polio;

(e) Safety of drinking water.

19. On the other hand, it is worth mentioning that researchers of the National Council for Scientific Research and the French Research Institute for Exploitation of the Sea found that the tissues of mussels in affected areas were heavily contaminated by polycyclic aromatic hydrocarbons, with a concentration well above the relevant WHO guideline values.

20. WHO is encouraged to continue supporting the recovery efforts of Lebanon, including environmental epidemiological studies to look into the potential long-term

[9] WHO Regional Office for the Eastern Mediterranean, (2007). *Report on Health Conditions in Lebanon and the occupied Palestinian territory: Implementation of Resolution EM/RC53/R.6- Part 2: Health Conditions in Lebanon.*

adverse health impacts on exposed populations. Clearly, the establishment of a health database is a high priority and remains to be done. Such a health registry will facilitate the tracking of long-term health outcomes for marine oil-spill workers and citizens in primary zones affected by burned oil plumes (those suffering from dermatitis, bronchitis, etc.).

## III. Assumption of responsibility for prompt and adequate compensation by the Government of Israel: progress made

21. In paragraph 3 of its resolution 61/194, the General Assembly called upon the Government of Israel to "assume responsibility for prompt and adequate compensation to the Government of Lebanon for the costs of repairing the environmental damage caused by the destruction, including the restoration of the marine environment".

22. To date, the Government of Israel has yet to assume its responsibility for prompt and adequate compensation to the Government of Lebanon. The reaction of the Government of Israel to resolution 61/194 was formally sought by a letter from the UNEP Post-Conflict and Disaster Management Branch to the Permanent Mission of Israel to the United Nations Office at Geneva, dated 16 August 2007, and a response is still awaited. Without an official response from Israel, it is difficult to report on progress.

23. In 2007, UNDP reviewed the many conventions that relate to oil pollution at sea and that many Eastern Mediterranean countries have signed, as well as other possible agreements or compensation schemes. Unfortunately, all conventions are inapplicable during armed hostilities. Additionally, the agreements that relate to spill compensation[10] pertain only to oil spills from tanker vessels at sea, and not land-based incidents. In 2007, UNDP recommended examination of the United Nations Compensation Commission as the only precedent major oil-spill compensation regime for spills arising from armed hostilities.

24. All littoral states of the Eastern Mediterranean are signatory to the only oil-spill response convention that relates to cooperation in response to spills arising from coastal oil-handling facilities and not merely from tankers. The International Convention on Oil Pollution Preparedness, Response and Cooperation (1990) entered into force in 1995 to facilitate international cooperation and mutual assistance between States and regions. The spirit of the Convention clearly could not be fully observed during the hostilities and marine oil-spill aftermath.

25. Although not specifically concerned with spill compensation issues (nor with non-accidental acts during war hostilities-related issues), the International Convention on Oil Pollution Preparedness, Response and Cooperation could nevertheless be utilized for capacity-building and regional cooperative spill planning in the future. Israel, Lebanon and the Syrian Arab Republic should be strongly encouraged to take a leadership role in a thorough post-spill review of Convention-related activities in the Eastern Mediterranean Sea, hosted by Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea. Other

[10] The Civil Liability Conventions of 1969 and 1992, the Fund Convention (International Oil Pollution Compensation Funds) of 1992 and the Supplementary Fund Protocol of 2003.

regional signatories of the Convention that could have been affected by the spill, including via aerial transfer combustion products, are Egypt, Greece, Jordan and Turkey.

26. A range of recovery measures to respond to the Lebanon oil spill has been suggested as a positive step to rebuild political stability and biodiversity conservation in the region.[11]

## IV. Progress made in the provision of financial and technical assistance in support of the Government of Lebanon's efforts to clean up the polluted shores and sea of Lebanon with a view to preserving its ecosystem

27. In paragraph 4 of its resolution 61/194, the General Assembly encouraged "Member States, regional and international organizations, regional and international financial institutions, and non-governmental organizations and the private sector to provide financial and technical assistance to the Government of Lebanon in support of its efforts to clean up the polluted shores and sea of Lebanon with a view to preserving its ecosystem".

28. When the oil spill occurred in July 2006, it overwhelmed national response capacity because of the ongoing conflict, the simultaneous need for a massive humanitarian response, the destruction of infrastructure and a land, air and sea blockade by Israel. These factors also impeded initial efforts for international assistance. During the conflict, the Lebanese Ministry of Environment mobilized resources with the support of the international community. The Ministry of Environment also coordinated preventive interventions such as the construction of barriers to protect the industry and coastline from further spillage. After the end of the conflict, international assistance flowed in and the Oil Spill Operations and Coordination Centre was established to coordinate the various forms of aid.

29. The Ministry of Environment implemented a two-phase clean-up and rehabilitation plan, with assistance from various bilateral donors and international organizations, as described in its report of July 2007.

### Phase I

30. During the first phase, the priorities set by the Ministry of Environment were to recover free-floating oil from the sea and confined areas; clean areas with potential for direct human contact or risk to public health; rehabilitate areas where oil slicks hampered economic activities; and address direct threats to environmentally or culturally important sites. This not only followed the three-part approach to sustainable development (social, economic and environmental) but was also consistent with best practices in protection and clean-up prioritization.

[11] Professor Richard Steiner, who participated in the assessment of the oil spill in Lebanon, asserted that the State of Israel should participate in a full and independent legal inquiry, establish a fund of $1 billion to reimburse all costs for oil-spill response, clean-up and economic losses caused and implement a comprehensive restoration programme. His expert opinion was duly communicated to senior officials in Lebanon and the United States of America, as well as to the Prime Minister of Israel and other senior Israeli officials. The Government of Israel "did not deem it proper to accede" to the above suggestions.

31. Work in phase I was completed in February 2007, with the support of various Member States and organizations (see annex). This assistance is estimated at almost $15 million, according to table 2.24 of the World Bank report.

32. It should be noted that the first Ministry of Environment estimate of the overall cost of clean-up and rehabilitation was $137 to $205 million, based on the Ministry's applied model of costs per ton spilled. The Experts Working Group for Lebanon recommended this as an upper limit, with €50 million as the minimum value. The Working Group therefore proposed that the search for funding be based on an initial amount of €50 million for 2006, with possible complements for 2007.[12] The total assistance received by Lebanon as of spring 2007 was therefore less than 10 per cent of the average upper limit, and only about 30 per cent of the minimum value. Furthermore, the lower estimate of €50 million arrived at by REMPEC was based substantially on the cost of just one major Mediterranean spill (Haven, 1991), which had similarities to but also some significant differences from the present spill in Lebanon.

**Phase II**

33. Following the completion of phase I, between April and May 2007 the Ministry of Environment conducted a survey of the Lebanese coast to determine the scope of work for phase II, which will focus primarily on the removal of fuel from rocks, wave cut platforms, cliffs and infrastructure. An underwater survey of the near and littoral shore zone covering the coast between Abdeh-Akkar and Jadra has been carried out by the Ministry and UNDP. In the course of the survey, submerged oil was observed in the area of Jiyeh and also near Byblos, where tar-balls are still being washed ashore.

34. Until June 2007, approximately 1144$m^3$ of liquid and 7537$m^3$ of semi-solid and solid waste have been collected through clean-up operations.[13] Based on the "mass balance of spilled oil" prepared by the Lebanese Ministry of Environment,[14] it is estimated that this reported quantity will increase by 50 per cent by the end of phase II clean-up operations. This waste is mostly stored in containers at temporary storage sites. Some waste is also stored temporarily at clean-up sites, pending transportation to more secure storage sites. The Government of Lebanon has requested studies on the treatment and disposal options in respect of oil-spill waste, as Lebanon currently lacks the infrastructure for the environmentally sound treatment of such waste.

[12] Experts Working Group for Lebanon, supervised by the IMO/UNEP REMPEC, *Lebanon Marine and Coastal Oil Pollution International Assistance Action Plan*, 25 August 2006. Members of the Experts Working Group for Lebanon include the Joint UNEP/OCHA Environment Unit; the European Commission Monitoring and Information Centre; the International Tankers Owners Pollution Federation Ltd; UNDP; Istituto Centrale per la Ricerca Scientifica e Tecnologica Applicata al Mare; and the Oceanography Centre, University of Cyprus and Centre de Documentation, de Recherche et d'Expérimentations sur les Pollutions Accidentelles des Eaux.

[13] Publication by the Lebanese Ministry of Environment, June 2007. *One year on the Oil Spill Crisis in Lebanon.*

[14] Information from the Lebanese Ministry of Environment.

# V. Conclusions

35. The Secretary-General wishes to commend the ongoing efforts of the Lebanese Government to address the impacts of the oil spill and to urge the Government of Israel to take the necessary actions towards assuming responsibility for prompt and adequate compensation to the Government of Lebanon. The Secretary-General would also like to commend the efforts of the United Nations system to respond to the emergency and to the requests of the Government. While the response of the international donor community has been both generous and timely in this matter, and given the particularity of the cause and the prevailing circumstances of the Lebanese oil spill case at the time of the incident and beyond. The Secretary-General would urge Member States, international organizations, international and regional financial institutions, non-governmental organizations and the private sector to continue their support for Lebanon in this matter and in its broader reconstruction efforts. This international effort should be intensified, since Lebanon is still engaged in oil removal, treatment of wastes and monitoring of recovery. It should also be recognized that this oil spill is not covered by any of the international oil-spill compensation funds and thus merits special consideration.

# Annex

## Member States, regional and international organizations, regional and international financial institutions, non-governmental organizations and private sector entities that have provided financial and technical assistance to the Government of Lebanon

| | *Cash contributions* | *Technical assistance*[a] | *Equipment*[b] | *Contractors*[c] |
|---|---|---|---|---|
| **Member States** | | | | |
| *First response during the war* | | | | |
| Kuwait | | | | |
| European Union/Denmark | | | | |
| Norway | | | | |
| *Others* | | | | |
| **Canada (Canadian International Development Agency)** | | | | |
| Cyprus | | | | |
| Finland | | | | |
| France | | | | |
| Germany | | | | |
| Italy | | | | |
| Monaco | | | | |
| Spain | | | | |
| Sweden | | | | |
| Switzerland (Swiss Agency for Development and Cooperation) | | | | |
| Japan | | | | |
| United States of America (United States Agency for International Development) | | | | |
| **Regional organizations** | | | | |
| Arab League | | | | |
| **International organizations** | | | | |

| | *Cash contributions* | *Technical assistance*[a] | *Equipment*[b] | *Contractors*[c] |
|---|---|---|---|---|
| United Nations Development Programme | [redacted] | | | |
| World Bank | | [redacted] | | |
| United Nations Environment Programme, Post-Conflict Branch, and Office for the Coordination of Humanitarian Affairs | | | | |
| Food and Agriculture Organization of the United Nations | | | | |
| **Regional finance institutions** | | | | |
| Organization of the Petroleum Exporting Countries | [redacted] | | | |
| **International finance institutions** | | | | |
| None | | | | |
| **International non-governmental organizations** | | | | |
| World Conservation Union, West Asia, Central Asia and North Africa office and Mediterranean offices | | [redacted] | | |
| Greenpeace | | | | |
| **International private sector** | | | | |
| None | | | | |

*Source*: Lebanese Ministry of Environment, Directorate General of Environment. The estimated contribution of funds does not exceed approximately 7.5 per cent of overall resources needed.

[a] Where technical assistance is transfer of technical know-how by experienced personnel for all kinds of activities related to the oil-spill recognition, evaluation and control activities.

[b] Where equipment is hardware and software (consumables) of all kinds for the purposes of oil-spill recognition, evaluation and control activities.

[c] Where contractors are third parties contracted to undertake oil-spill recognition, evaluation and control activities and are directly subcontracted by partners (donors).